ABSTRACT

A system and method for the detection and three dimensional imaging of absorption and scattering properties of a medium such as human tissue is described. According to one embodiment of the invention, the system directs optical energy toward a turbid medium from at least one source and detects optical energy emerging from the turbid medium at a plurality of locations using at least one detector. The optical energy emerging from the medium and entering the detector originates from the source is scattered by the medium. The system then generates an image representing interior structure of the turbid medium based on the detected optical energy emerging from the medium. Generating the image includes a time-series analysis.